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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/796,398

03/08/2004

William E. McKinzie III

39588.00002.UTL1

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03/01/2006

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EXAMINER

HAM, SEUNGSOOK

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/796,398

Applicant(s)

MCKINZIE, WILLIAM E.

Examiner

Seungsook Ham

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2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56, 59 and 60 is/are pending in the application.
- 4a) Of the above claim(s) 39-49, 52, 59 and 60 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5, 6, 8-14, 16, 18, 19, 21-27, 29, 31, 32, 34-38, 50, 51 and 53-56 is/are rejected.
- 7) ☒ Claim(s) 2, 4, 7, 15, 17, 20, 28, 30 and 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/14/05, 1/9/06
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/3/06 has been entered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "resonant via is physically connected to **only** the first and second conducting pads" (see claim 1, lines 10 and 11, and claims 10 and 23) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. It should be noted that the applicant's figure 4 (see Internal "I", External "I" and Hybrid "I") shows a **schematic** diagram of claimed subject matter claim 1, however, it appears that there is no physical structure that depicts the subject matter of claims 1, 10 and 23.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Allowable Subject Matter

The indicated allowability of claims 1-38, 50, 51 and 53-56 is withdrawn in view of the already cited reference(s) to Yamamoto et al. (US '917) and Devoe et al. (US '532). Rejections based on the cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, 6, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (US '917).

Yamamoto et al. (fig. 6) discloses a resonant element comprising: first and second conducting planes 10, 11, a resonant via 6 physically connected to only the first and second conducting pads, respectively, 4, 1; wherein the first and second conducting pads are located internally relative to the first and second conducting planes 10, 11.

Regarding claim 8, Yamamoto et al. teaches that the first and second conducting planes are metallic layers incorporated within a multi-layered printed circuit board (col. 4, lines 61-66).

Regarding claim 9, the resonant element is a combined inductance and capacitance forms an electromagnetically resonant shunt circuit between the first and second conducting planes for a certain frequency range (col. 4, lines 1-15).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 5, 6, 8-13, 16, 18, 19, 21-26, 29, 31, 32, 34-38, 53 and 55 are rejected under 35 U.S.C. 102(e) as being anticipated by Devoe et al. (US '352).

Devoe et al. (fig. 16) discloses a resonant element/electromagnetically reactive structure/a layered assembly comprising: first and second conducting planes 58, a plurality of vias 52 physically connected to only the first and second conducting pads, respectively, 54; wherein the first and second conducting pads are located internally relative to the first and second conducting planes 58. It should be noted that each via 52 is a resonant via since each plated via inherently possesses inductance, and the

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capacitance is provided between the conducting pads 54 and the first and second conducting planes 58 (thus, providing a resonant shunt circuit) which will resonate at a predetermined frequency.

Regarding claims 8, 21, 34 and 36-38, Devoe et al. teaches that the resonant element structure can be disposed on a printed circuit boards (i.e., multi-layered structure, col. 14, lines 20-27).

Regarding claims 12, 13, 25 and 26, Devoe et al. also a waveguide structure (i.e., ceramic plate 56).

Regarding claims 53 and 55, Devoe et al. (fig. 16) also shows some of resonators form a periodic array having first and second periodic structures (fig. 16 shows two pairs of vias structures).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-13, 16, 18, 19, 21, 22-26, 29, 31, 32, 34-38, 50, 51 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US '917).

Yamamoto et al. is applied as above. Yamamoto et al. is silent as to whether more than one resonant via can be provided. However, Yamamoto et al. suggests providing more than one attenuation pole (col. 4, lines 10-15).

It would have been obvious to one of ordinary skill in the art to provide more than one resonant via in the device of Yamamoto et al. to obtain more than one attenuation pole, or to obtain a desired filter frequency (e.g., stop band).

Regarding claims 36-38, providing the resonant element/layered assembly of Yamamoto et al. in an integrated semiconductor chip or multi-chip module is considered as obvious design modification since such design techniques are well known in the art, and also Yamamoto et al. teaches the structure is formed on a multi-layered structure. Regarding claims 12, 13, 25 and 26, Yamamoto et al. also a waveguide structure (i.e., dielectric layers 2, 3) and also forming a band stop (e.g., choke circuit).

Claims 14, 27, 50, 51, 54 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devoe et al. (US '352).

Devoe et al. (fig. 16) is silent as to the spacing between the resonant vias is less than about one-half the wavelength of the desired stop band frequency. However, providing the resonant vias spacing less than about one-half the wavelength of the desired stop band frequency or a different periodic spacing since Devoe et al. teaches that the spacing between vias can be different to obtain a desired frequency/capacitance (col. 18, lines 65-67).

Allowable Subject Matter

Claims 2, 4, 7, 15, 17, 20, 28, 30 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Seungsook Ham
Primary Examiner
Art Unit 2817

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